Appendix 3.3-B
Draft Federal General Conformity Determination

CALIFORNIA HIGH-SPEED TRAIN

Project Environmental Impact Report / Environmental Impact Statement

DRAFT

Fresno to Bakersfield Section: General Conformity Determination

March 2014

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation
Federal Railroad Administration

Executive Summary

The California High-Speed Train (HST) System will provide intercity, high-speed service on more than 800 miles of guideway throughout California, connecting the major population centers of Sacramento, the San Francisco Bay Area, the Central Valley, Los Angeles, the Inland Empire, Orange County, and San Diego. The Fresno to Bakersfield HST Section ("Project" or "Federal Action"), which is the focus of this General Conformity Determination, is a critical link connecting the Bay Area and Merced to Fresno HST sections to the Bakersfield to Palmdale and Palmdale to Los Angeles HST sections.[1]

The General Conformity Rule, as codified in Title 40 Code of Federal Regulations (CFR) Part 93, Subpart B, establishes the process by which federal agencies determine conformance of proposed projects that are federally funded or require federal approval with applicable air quality standards. This determination must demonstrate that a Proposed Action would not cause or contribute to new violations of air quality standards, exacerbate existing violations, or interfere with timely attainment or required interim emissions reductions towards attainment. The California High-Speed Rail Authority (Authority), as the Project proponent, is receiving federal grant funds through the Federal Railroad Administration's (FRA) High-Speed Intercity Passenger Rail program. The Project may also receive FRA safety approvals. Because of the federal funding and potential safety approvals, and because construction-phase emissions (without mitigation) would exceed General Conformity emission thresholds, the Project is subject to the General Conformity Rule.

This draft General Conformity Determination documents FRA's finding that the Project complies with the General Conformity Rule and that it conforms to the purposes of the area's approved State Implementation Plan and is consistent with all applicable requirements. This draft General Conformity Determination is beings issued for public review and comment based on the Project design feature and mitigation measures that were described in Section 3.3.8 and 3.3.9 of the Fresno to Bakersfield Section Final Environmental Impact Report/Environmental Impact Statement (Authority and FRA 2012a) and that will be implemented for the Project. This compliance is demonstrated herein as follows:

- The operation of the Project would result in a reduction of regional emissions of all applicable air pollutants and would not cause a localized exceedance of an air quality standard; and
- While emissions generated during the construction of the Project would exceed General Conformity thresholds for two pollutants, these emission increases would be off-set through a Voluntary Emission Reduction Agreement (VERA) with the San Joaquin Valley Air Pollution Control District (SJVAPCD).

[1] As part of its first phase, the California HST system is currently planned as seven distinct sections from San Francisco in the north to Los Angeles and Anaheim in the south.

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1.0 Introduction

This document is the draft General Conformity Determination for the Fresno to Bakersfield Section of the California High-Speed Train (HST) System ("Project" or "Federal Action") and is required by the implementing regulations of Section 176 of the Clean Air Act (CAA). Section 176(c)(1) of the CAA prohibits federal agencies from engaging in, supporting, or providing financial assistance for licensing, permitting or approving any activities that do not conform to an approved CAA implementation plan. That approved plan may be a federal, state or tribal implementation plan.

The CAA defines nonattainment areas as geographic regions that have been designated as not meeting one or more of the National Ambient Air Quality Standards (NAAQS). The CAA requires that each state prepare a State Implementation Plan (SIP) for each nonattainment area, and a maintenance plan be prepared for each former non-attainment area that subsequently demonstrated compliance with the standards. The SIP is a state's plan for how it will meet the NAAQS by the deadlines established by the CAA.

The General Conformity Rule is codified in Title 40 Code of Federal Regulations (CFR) Part 93, Subpart B, "Determining Conformity of General Federal Actions to State or Federal Implementation Plans." Conformity is defined as "upholding an implementation plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards." 40 CFR Part 93 also establishes the process by which federal agencies determine conformance of proposed projects that are federally funded or require federal approval. This determination must demonstrate that the Proposed Action would not cause or contribute to new violations of air quality standards, exacerbate existing violations, or interfere with timely attainment or required interim emissions reductions towards attainment. Since the Project is receiving federal funds through grants with the Federal Railroad Administration (FRA) and may also receive safety approvals from FRA, it is an action that may be subject to the General Conformity Rule.

This draft General Conformity Determination is being issued concurrently with the Fresno to Bakersfield Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) which complies with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). Because the analysis used for the Final EIR/EIS also generated the information necessary for this draft General Conformity Determination, specific analysis may be incorporated herein by reference.

1.1 Regulatory Status of Study Area

By way of background, in addition to the regulations covering the General Conformity Rule, on November 24, 1993, the U.S. Environmental Protection Agency (EPA) promulgated final conformity regulations to address transportation plans, programs, and projects developed, funded or approved under title 23 U.S.C. or the Federal Transit Act, 49 U.S.C 1601 et seq (40 CFR Part 93 Subpart A). These regulations have been revised several times since they were first issued. While the transportation conformity regulations do not apply to this Project (see **Section 1.2**), many of the transportation planning documents developed under those regulations are helpful in understanding the regional air quality and planning status of the study area.

The study area for this draft General Conformity Determination is the San Joaquin Valley Air Basin (SJVAB). Planning documents for pollutants for which the study area is classified as a federal nonattainment or maintenance area are developed by the San Joaquin Valley Air Pollution Control District (SJVAPCD), and the California Air Resources Board (CARB), and approved by EPA. Figure 1 shows the Project alignment as it is situated in the San Joaquin Valley Air Basin. Table 1 lists the planning documents relevant to the proposed Project's study area.

Figure 1
San Joaquin Valley Air Basin

Table 1
Planning Documents Relevant to Project's Study Area

Type of Plan	Status
1-Hour Ozone (O_3) Attainment Plan	On September 19, 2013, EPA approved San Joaquin Valley's 2013 Plan for the Revoked 1-Hour Ozone Standard. Effective June 15, 2005, EPA revoked the federal 1-hour O_3 standard for areas including the San Joaquin Valley Air Basin (SJVAB).[a]
8-Hour O_3 Attainment Plan	On May 5, 2010, EPA reclassified the 8-hour O_3 nonattainment status of San Joaquin Valley from "serious" to "extreme." The reclassification requires the state to incorporate more-stringent requirements, such as lower permitting thresholds and implementing reasonably available control technologies at more sources.[b] The 2007 8-hour Ozone Plan contained a comprehensive and exhaustive list of regulatory and incentive-based measures to reduce emissions of O_3 and particulate matter precursors throughout the San Joaquin Valley. On December 18, 2007, the SJVAPCD Governing Board adopted the plan with an amendment to extend the rule adoption schedule for organic waste operations. On January 8, 2009, EPA found that the motor vehicle budgets for 2008, 2020, and 2030 from the 2007 8-hour Ozone Plan were not adequate for transportation conformity purposes. The next plan will address EPA's 2008 8-hour ozone standard of 75 parts per billion (ppb). This 8-hour ozone plan is expected to be due to EPA in 2015/2016[a]
Particulate Matter, 10 microns or less in diameter (PM_{10}) Maintenance Plan	On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM_{10} NAAQS and approved the 2007 PM_{10} Maintenance Plan.[c]
Particulate Matter, 2.5 microns or less in diameter ($PM_{2.5}$) Attainment Plan	The SJVAPCD adopted the 2008 $PM_{2.5}$ Plan on April 30, 2008. This plan addresses EPA's annual $PM_{2.5}$ standard of 15 µg/m^3, which was established by EPA in 1997.[d] The California Air Resources Board (ARB) approved the District's 2012 $PM_{2.5}$ Plan at a public hearing on January 24, 2013. The plan, approved by the District Governing Board on December 20, 2012, will bring the Valley into attainment of EPA's 2006 $PM_{2.5}$ standard by the 2019 deadline, with most areas seeing attainment well before then.[e]
Carbon Monoxide (CO) Maintenance Plan	On July 22, 2004, CARB approved an update to the SIP that shows how 10 areas, including the SJVAB, will maintain the CO standard through 2018. On November 30, 2005, EPA approved and promulgated the implementation plans and designation of areas for air quality purposes.[f]

[a] SJVAPCD (2013).
[b] SJVAPCD (2007a).
[c] SJVAPCD (2007b).
[d] SJVAPCD (2008).
[e] SJVAPCD (2012).
[f] CARB (2004b); EPA (2005).

1.2 General Conformity Requirements

On November 30, 1993, EPA promulgated final General Conformity regulations at 40 CFR Part 93 Subpart B for all federal activities except highways and transit programs covered by Transportation Conformity. The regulations in Subpart B were subsequently amended in March of 2010. The HST Project requires approval by FRA, and because the Project will not be funded or require approval(s) under Title 23 U.S.C.

or the Federal Transit Act, 49 U.S.C 1601 et seq., the General Conformity requirements are applicable, rather than transportation conformity. In general terms, unless a project is exempt under 40 CFR § 93.153(c) or is not on the agency's presumed–to-conform list pursuant to 40 CFR § 93.153(f), a General Conformity Determination is required where a Federal Action in a nonattainment or maintenance area causes an increase in the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutants that are equal to or exceed certain *de minimis* rates.

The General Conformity regulations incorporate a stepwise process, beginning with an applicability analysis. According to EPA's *General Conformity Guidance: Questions and Answers* (EPA 1994) (EPA Guidance), before any approval is given for a Federal Action to go forward, the federal agency must apply the applicability requirements found at 40 CFR § 93.153 to the Federal Action and/or determine on a pollutant-by-pollutant basis, whether a determination of General Conformity is required. During the applicability analysis, the federal agency determines the following:

- Whether the action will occur in a nonattainment or maintenance area;
- Whether one or more of the specific exemptions apply to the action;
- Whether the federal agency has included the action on its list of presumed-to-conform actions;
- Whether the total direct and indirect emissions are below or above the *de minimis* levels; and/or
- Where a facility has an emissions budget approved by the State or Tribe as part of the SIP or TIP, the federal agency determines that the emissions from the proposed action are within the budget (EPA 2010a).

The EPA Guidance states that the applicability analysis can be (but is not required to be) completed concurrently with any analysis required under the National Environmental Policy Act (NEPA). The applicability analysis for this Project is described in **Section 8.0**.

If through the applicability analysis process the responsible federal agency determines that the General Conformity regulations do not apply to the Federal Action, no further analysis or documentation is required. If, however, the General Conformity regulations do apply to the Federal Action, the responsible federal agency must conduct a conformity evaluation in accordance with the criteria and procedures in the implementing regulations; publish a draft determination of General Conformity for public review; and then publish the final determination of General Conformity.

To make a conformity determination, the federal agency must demonstrate conformity by one or more of several prescribed methods. These methods include:

- Demonstrating that the direct and indirect emissions are specifically identified in the relevant implementation plan,
- Obtaining a written statement from the entity responsible for the implementation plan that the total indirect and direct emissions from the action, along with other emissions in the area, will not exceed the total implementation plan emission budget, or
- Fully offsetting the total direct and indirect emissions by reducing emissions of the same pollutant in the same nonattainment or maintenance area.

2.0 Description of the Federal Action Requiring Conformity Evaluation

In accordance with applicable General Conformity regulations and guidance, when a General Conformity Determination is necessary, the FRA conducts a General Conformity evaluation for the specific federal action associated with the preferred alternative for a project or program (EPA 1994), and FRA must issue a positive conformity determination before the federal action is approved. Each federal agency is responsible for determining conformity of those proposed actions over which it has jurisdiction. This draft General Conformity Determination is related only to those activities included in the FRA's Federal Action pertaining to the HST Project, which is the Project's potential approval through a NEPA Record of Decision (ROD). The Project is described further in **Section 3.0** below.

General Conformity requirements only apply to federal actions proposed in nonattainment areas (i.e., areas where one or more NAAQS are not being achieved at the time of the proposed action and requiring SIP provisions to demonstrate how attainment will be achieved) and in maintenance areas (i.e., areas recently reclassified from nonattainment to attainment and requiring SIP provisions to demonstrate how attainment will be maintained).

3.0 California High Speed Train Project

3.1 California High Speed Train System

The Authority, a state governing board formed in 1996, is responsible for planning, designing, constructing, and operating the HST System. Its mandate is to develop a high-speed rail system connecting the state's major population centers and coordinating with the state's existing transportation network, which includes intercity rail and bus lines, regional commuter rail lines, urban rail and bus transit lines, highways, and airports.

The HST System will provide intercity, high-speed service on more than 800 miles of railroad throughout California, connecting the major population centers of Sacramento, the San Francisco Bay Area, the Central Valley, Los Angeles, the Inland Empire, Orange County, and San Diego. It will use state-of-the-art, electrically powered, high-speed, steel-wheel-on-steel-rail technology, including contemporary safety, signaling, and automated train-control systems, with trains capable of operating up to 220 miles per hour (mph) over a fully grade-separated, dedicated guideway alignment.

FRA is responsible for oversight and regulation of railroad safety and is also charged with the implementation of the High-Speed Intercity Passenger Rail (HSIPR) financial assistance program. As part of the HSIPR Program, FRA is providing partial funding for the environmental analysis and documentation required under NEPA, CEQA and other related environmental laws. In this effort, FRA is the federal lead agency on the EIR/EIS for the HST System including the EIR/EIS for the Project. In addition to its involvement in the environmental analysis and documentation, FRA is also providing partial funding for the final design and construction of the initial construction section of the HST System, which includes activities analyzed in this draft Conformity Determination.

In April 2012, FRA and the Authority published the Final EIR/EIS for the Merced to Fresno Section of the HST System. The Authority certified the EIR and adopted the project in May, while the FRA issued its Record of Decision (ROD) in September 2012. The Merced to Fresno Section is also within the SJVAB and a General Conformity Determination was prepared as part of the environmental process to comply with the CAA. It is worth noting that the Merced to Fresno General Conformity Determination includes the Authority's commitment to offset all emissions to net zero through a Voluntary Emissions Reduction Agreement (VERA) between the Authority and the SJVAPCD.

While FRA and the Authority consider the Fresno to Bakersfield section of the HST System independent of the other HST System sections for purposes of NEPA and CEQA analysis, certain construction activities within the Merced to Fresno Section, as well as within the future Bakersfield to Palmdale and San Jose to Merced Sections, may occur concurrently with Fresno to Bakersfield Section construction activities. Therefore, estimates of these cumulative emissions within the SJVAB have been presented in Section 11.0 of this document. Although the Sacramento to Merced Section is not expected to be constructed concurrently with the Fresno to Bakersfield Section, estimates of the cumulative emissions of this section have also been included in Section 11.0. These future emissions estimates have been included in this document in the interest of the full disclosure of future construction emissions that may occur in the SJVAB from other sections of the HST Project; each of these sections will undergo separate conformity determinations at a later date.

3.2 California High Speed Train System – Fresno to Bakersfield Section

The purpose of the Fresno to Bakersfield Section of the HST System is to implement the California HST System between Fresno and Bakersfield, providing the public with electric-powered high-speed rail service that provides predictable and consistent travel times between major urban centers and connectivity to airports, mass transit systems, and the highway network in the south San Joaquin Valley,

and to connect the northern and southern portions of the HST System. The Fresno to Bakersfield Section would be approximately 114 miles long, varying in length by only a few miles depending on the route alternatives selected. To comply with the Authority's guidance to use existing transportation corridors when feasible, the Fresno to Bakersfield HST Section would primarily be located adjacent to the existing BNSF Railway right-of-way. Alternative alignments are being considered where engineering constraints require deviation from the existing railroad corridor, and where necessary to avoid environmental and community impacts.

The Fresno to Bakersfield Section would cross both urban and rural lands and include a station in both Fresno and Bakersfield, a potential Kings/Tulare Regional Station in the vicinity of Hanford, a potential heavy maintenance facility (HMF), and power substations along the alignment. The HST alignment would be entirely grade-separated, meaning that crossings with roads, railroads, and other transportation facilities would be located at different heights (overpasses or underpasses) so that the HST would not interrupt nor interface with other modes of transportation. The HST right-of-way would also be fenced to prohibit public or vehicle access. The Project footprint would primarily consist of the train right-of-way, which would include both a northbound and southbound track in an area typically 120 feet wide. Additional right-of-way would be required to accommodate stations, multiple track at stations, maintenance facilities, and power substations.

The Fresno to Bakersfield Section would include at-grade, below-grade, and elevated track segments. The at-grade track would be laid on an earthen rail bed topped with rock ballast approximately 6 feet off the ground; fill and ballast for the rail bed would be obtained from permitted borrow sites and quarries. Below-grade track would be laid in an open or covered trench at a depth that would allow roadway and other grade-level uses above the track. Elevated track segments would span long sections of urban development or aerial roadway structures and consist of steel truss aerial structures with cast-in-place reinforced-concrete columns supporting the box girders and platforms. The height of elevated track sections would depend on the height of existing structures below, and would range from 40 to 80 feet. Columns would be spaced 60 to 120 feet apart.

The Project EIR/EIS for the Fresno to Bakersfield HST Section examines alternative alignments, stations, and HMF sites within the general BNSF Railway corridor. The BNSF Alternative most closely aligns with the preferred alignment identified in the Record of Decision (ROD) for the Statewide Program EIR/EIS. The alternative alignments that deviate from the BNSF Alternative were selected to avoid environmental, land use, or community issues identified for portions of the BNSF Alternative.

The following alignment alternatives were considered: The BNSF Alternative, the Hanford West Bypass 1 Alternative, the Hanford West Bypass 2 Alternative, the Corcoran Elevated Alternative, the Corcoran Bypass Alternative, the Allensworth Bypass Alternative, the Wasco-Shafter Bypass Alternative, the Bakersfield South Alternative, and the Bakersfield Hybrid Alternative. The following station alternatives were considered: the Fresno Station Alternatives (Mariposa and Kern), the Kings/Tulare Regional Station Alternatives (East and West), the Bakersfield Station Alternatives (North, South, and Hybrid).

It is estimated that construction of the Fresno Bakersfield Section of the HST System would take approximately ten years, with initiation of construction in 2014 and completion in 2023.

4.0 Air Quality Conditions in the Study Area

4.1 Meteorology and Climate

Air quality is affected by both the rate and location of pollutant emissions, and by meteorological conditions that influence movement and dispersal of pollutants in the atmosphere. Atmospheric conditions, such as wind speed, wind direction, and air temperature gradients, along with local topography, provide the link between air pollutant emissions and local air quality levels.

Elevation and topography can affect localized air quality. The Project is located in the San Joaquin Valley Air Basin (SJVAB), which encompasses the southern two-thirds of California's Central Valley. The SJVAB is approximately 250 miles long and is shaped like a narrow bowl. The sides and southern boundary of the bowl are bordered by mountain ranges. The valley's weather conditions include frequent temperature inversions; long, hot summers; and stagnant, foggy winters, all of which are conducive to the formation and retention of air pollutants (SJVAPCD 2009).

The SJVAB is typically arid in the summer months with cool temperatures and prevalent tule fog (i.e., a dense ground fog) in the winter and fall. The average high temperature in the summer months is in the mid-90s and the average low in the winter is in the high 40s. January is typically the wettest month of the year with an average of about 2 inches of rain. Wind direction is typically from the northwest with average monthly wind speeds ranging from 4.7 mph to 8.3 mph (Western Regional Climate Center 2009).

4.2 Ambient Air Quality in the Study Area

CARB maintains ambient air monitoring stations for criteria pollutants throughout California. Three monitor stations in the vicinity of the HST alignment alternatives were selected for representative ambient monitored data; these are 4706 E. Drummond Street in Fresno, 310 North Church Street in Visalia, and 5558 California Avenue in Bakersfield. These stations monitor CO, O_3, NO_2, PM_{10}, and $PM_{2.5}$. The land uses in the region range from urban and residential to rural and agricultural, and these stations represent these land use types. Air quality standards, primarily for O_3 and PM, have been exceeded in the SJVAB because of existing industrial and agricultural sources. Table 2 summarizes the results of ambient monitoring at the three stations from 2010 through 2012. A brief summary of the monitoring data includes the following:

- Monitored data from 2010 through 2012 do not exceed either the state or federal standards for CO or NO_2.
- O_3 values for the region exceed the state and the national 8-hour O_3 standards for all stations for the years 2010 through 2012. O_3 values for the region also exceed the state 1-hour O_3 standard for all stations for every year in the past 3 years.
- The PM_{10} values for the region exceed the state 24-hour PM_{10} standard for all stations for years 2010 through 2012.
- The $PM_{2.5}$ values for the region exceed the national 24-hour $PM_{2.5}$ standard for the two monitoring stations where $PM_{2.5}$ was measured (Visalia and Bakersfield) over the last 3 years. The national annual standard was exceeded at both of these monitoring stations in 2011.
- SO_2 values were not monitored at any of these monitoring stations.

Table 2
Ambient Criteria Pollutant Concentration Data at Air Quality Monitoring Stations Closest to the Project

Air Pollutant	Standard/Exceedance	4706 E. Drummond Street, Fresno			310 N. Church Street, Visalia			5558 California Avenue, Bakersfield		
		2010	2011	2012	2010	2011	2012	2010	2011	2012
Carbon Monoxide (CO)	Year Coverage	72%	97%	NM	NM	NM	NM	NM	NM	NM
	Max. 1-hour Concentration (ppm)	2.0	2.8	NM	NM	NM	NM	NM	NM	NM
	Max. 8-hour Concentration (ppm)	1.45	1.73	NM	NM	NM	NM	NM	NM	NM
	# Days>Federal 1-hour Std. of >35 ppm	0	0	NM	NM	NM	NM	NM	NM	NM
	# Days>Federal 8-hour Std. of >9 ppm	0	0	NM	NM	NM	NM	NM	NM	NM
	# Days>California 8-hour Std. of >9 ppm	0	0	NM	NM	NM	NM	NM	NM	NM
Ozone (O_3)	Year Coverage[a]	75%	97%	98%	100%	95%	99%	99%	98%	97%
	Max. 1-hour Concentration (ppm)	0.108	0.129	0.127	0.122	0.119	0.111	0.109	0.107	0.102
	Max. 8-hour Concentration (ppm)	0.091*	0.104*	0.108*	0.104*	0.083*	0.094*	0.097*	0.094*	0.095*
	# Days>Federal 8-hour Std. of >0.075 ppm	13	52	46	34	17	37	28	25	56
	# Days>California 1-hour Std. of >0.09 ppm	5	27	19	15	4	9	8	5	9
	# Days>California 8-hour Std. of >0.07 ppm	24	73	75	57	33	60	48	51	83
Nitrogen Dioxide (NO_2)	Year Coverage	55%	79%	87%	98%	91%	99%	99%	97%	95%
	Max. 1-hour Concentration (ppm)	0.062	0.069	0.070	0.077	0.058	0.061	0.079	0.064	0.064
	Annual Average (ppm)	N/A	N/A	0.013	0.013	0.012	0.012	0.014	0.015	0.015
	# Days>California 1-hour Std. of >0.18 ppm	0	0	0	0	0	0	0	0	0
Sulfur Dioxide (SO_2)	Year Coverage	NM	NM	NM	NM	NM	NM	NM	NM	NM
	Max. 24-hour Concentration (ppm)	NM	NM	NM	NM	NM	NM	NM	NM	NM
	Annual Average (ppm)	NM	NM	NM	NM	NM	NM	NM	NM	NM
	# Days>California 24-hour Std. of >0.04 ppm	NM	NM	NM	NM	NM	NM	NM	NM	NM
Respirable Particulate Matter (PM_{10})	Year Coverage	63%	100%	25%	100%	96%	98%	99%	89%	97%
	Max. 24-hour Concentration (µg/m^3)	68.1	86.1	114.0	90.8	78.1	75.7	86.0	97.4	99.6
	#Days>Fed. 24-hour Std. of >150 µg/m^3	0	0	0	0	0	0	0	0	0
	#Days>California 24-hour Std. of >50 µg/m^3	8	12	8	10	11	15	67	113	55
	Annual Average (µg/m^3)	26.9	31.4	42.9	33.8	33.4	37.3	32.3	36.6	40.4
Fine Particulate Matter ($PM_{2.5}$)	Year Coverage	NM	NM	NM	100%	96%	93%	88%	82%	94%
	Max. 24-hour Concentration (µg/m^3)	NM	NM	NM	59.8*	73.2*	76.2*	92.2*	80.3*	86.5*
	State Annual Average (µg/m^3)	NM	NM	NM	13.6	16.1	14.8	17.2	18.1	17.9
	#Days>Fed. 24-hour Std. of >35 µg/m^3	NM	NM	NM	3	9	7	26	30	22
	Annual Average (µg/m^3)	NM	NM	NM	13.5	16.0*	14.7	14.1	16.2*	13.0

[a] Coverage is for 8-hour standard
* Exceeds annual NAAQS
NM not monitored
N/A not available
> greater than
µg/m^3 micrograms per cubic meter
PM_{10} particulate matter smaller than or equal to 10 microns in diameter
$PM_{2.5}$ particulate matter smaller than or equal to 2.5 microns in diameter
ppm part(s) per million
Sources: CARB 2013a; USEPA 2013b.

4.3 Study Area Emissions

CARB maintains an annual emission inventory for each county and air basin in the state. The inventory for the SJVAB consists of data submitted to CARB by SJVAPCD plus estimates for certain source categories, which are provided by CARB staff. The most recent published inventory data for the SJVAB is summarized in Table 3.

Table 3
2010 Estimated Annual Average Emissions for SJVAB (tons per day)

Source Category	VOCs	CO	NO_x	SO_x	PM	PM_{10}	$PM_{2.5}$
Stationary Sources							
Fuel Combustion	10.7	36.1	56.9	13	7.5	7	6.7
Waste Disposal	2.7	0.5	0.2	0.1	0.4	0.1	0.1
Cleaning and Surface Coatings	16.1	0	0	-	0.1	0.1	0.1
Petroleum Production and Marketing	35.5	1.1	0.4	0.2	0.2	0.2	0.2
Industrial Processes	19.0	4	21.8	7.2	29.4	17.9	10.6
Total Stationary Sources	84.1	41.7	79.5	20.6	37.7	25.4	17.7
Stationary Sources Percentage of Total	14.1	2.6	14.9	76.6	6.5	7.5	13.2
Area-wide Sources							
Solvent Evaporation	59.2	-	-	-	-	-	-
Miscellaneous Processes	92.4	267.9	17.7	1.1	478.7	254.2	67.8
Total Area-wide Sources	151.6	267.9	17.7	1.1	478.7	254.2	67.8
Area-wide Sources Percentage of Total	25.4	16.5	3.3	4.1	83.2	75.4	50.6
Mobile Sources							
On-road Motor Vehicles	71.5	628.5	297.6	0.7	13.7	13.7	10.9
Other Mobile Sources	53.6	334.2	128.9	1.2	8.8	8.7	7.9
Total Mobile Sources	125.1	962.7	426.5	1.9	22.6	22.3	18.8
Mobile Sources Percentage of Total	21.0	59.4	79.8	7.1	3.9	6.6	14.0
Natural (Nonanthropogenic) Sources							
Natural Sources	235.2	347.5	10.6	3.3	36.6	35.2	29.8
Total Natural (Nonanthropogenic Sources)	235.2	347.5	10.6	3.3	36.6	35.2	29.8
Natural Sources Percentage of Total	39.5	21.5	2.0	12.3	6.4	10.4	22.2
Grand Total	**596.1**	**1,619.9**	**534.3**	**26.9**	**575.6**	**337.1**	**134.1**

Source: CARB 2013b.

In the SJVAPCD, mobile source emissions account for approximately 60% and 80% of the basin's CO and NO_x emissions, respectively. Area sources account for over 80% and over 25% of the basin's particulate matter and total VOC emissions, respectively, and stationary sources account for over 70% of the basin's sulfur oxides (SO_X) emissions.

4.4 Project Study Area Designations

The study area (or portions of counties within the study area) defined in the EIR/EIS for the HST Project and for this final General Conformity Determination is currently designated as extreme nonattainment for 8-hour ozone, nonattainment for particulate matter smaller than 2.5 microns ($PM_{2.5}$), and maintenance for particulate matter smaller than 10 microns (PM_{10}) and carbon monoxide (i.e., the Fresno and Bakersfield urbanized areas). The SJVAB is in attainment for all other pollutants. Therefore, conformity regulations would apply to these four pollutants if the annual emissions of these pollutants generated by the proposed Project were to exceed the General Conformity *de minimis* thresholds. As such, annual emissions of these pollutants generated by the proposed Project in the entire SJVAB were compared to these thresholds.

5.0 Relationship to NEPA

The Authority and FRA circulated the Draft EIR/EIS in August 2011 providing an analysis of nine Build alternatives and a No-Build alternative. Because of substantive comments received during the public and agency review of the Draft EIR/EIS, the Authority and FRA decided to reintroduce two alternative alignments west of Hanford (the Hanford West Bypass 1 and 2 Alternatives) that would be consistent with the preferred alternative identified in the Statewide Program EIR/EIS, and another alternative in Bakersfield (Bakersfield Hybrid Alternative) that would minimize impacts to residential and community facilities in the Bakersfield Metropolitan Area. As a result, the Authority and the FRA circulated a Revised Draft EIR/Supplemental Draft EIS in March 2012 providing an evaluation of these additional alternative alignments. The Final Fresno to Bakersfield EIR/EIS identifies potential environmental impacts of the Project, both adverse and beneficial, identifies appropriate measures to mitigate adverse impacts, and identifies the agencies' preferred alternative. The EIR/EIS was prepared to comply with both NEPA and CEQA.

The General Conformity regulations establish certain procedural requirements that must be followed when preparing a General Conformity evaluation and are similar but not identical to those for conducting an air quality impact analysis under NEPA regulations. NEPA requires that the air quality impacts of the proposed Project's implementation be analyzed and disclosed. For purposes of NEPA, the air quality impacts of the Project were determined by identifying the Project's associated incremental emissions and air pollutant concentrations and comparing them, respectively, to emissions thresholds and state and national ambient air quality standards. The air quality impacts of the Project under future Build conditions were also compared in the Final EIR/EIS to the future No-Build conditions for NEPA purposes (they were also compared to existing conditions). The General Conformity Determination process and general findings are discussed in sections 3.3.2.1, 3.3.6.1, and 3.3.7.1 of the Final EIR/EIS.

In order to appropriately identify and offset, where necessary, the emissions resulting from the Fresno to Bakersfield section of the HST system, FRA is issuing this draft General Conformity Determination. The Authority has entered into discussions with the SJVAPCD to offset any emissions, as necessary, resulting from the Fresno to Bakersfield Section through the same Voluntary Emission Reduction Agreement (VERA) agreement as described in **Section 12.2**.

6.0 Avoidance and Mitigation Measures to Reduce Emissions to Be Incorporated in the Project

In order to reduce impacts on the environment and as required by NEPA and CEQA, the construction of the Project will include Project design features and mitigation measures (Section 3.3.8 and 3.3.9 of the EIR/EIS) that will be implemented as part of the Project to minimize, avoid, and mitigate air quality impacts. These Project design features and mitigation measures will be required components of the Project They will be included in the Mitigation Monitoring and Enforcement Program which will be issued concurrently with FRA's ROD and would be enforceable commitments undertaken by the Authority. Construction of the Project is anticipated to occur through a design/build contract. The Authority will include all of the Project design features and mitigation measures into the construction contract which will create binding and enforcement commitment to implement these design features and mitigation measures.

The Authority will be responsible for implementing and overseeing a mitigation monitoring program to ensure that the contractor meets all air quality design features and mitigation measures.

Project design features as part of the Project include the following:

- Trucks would be covered to reduce significant fugitive dust emissions while hauling soil and other similar material.
- All trucks and equipment will be washed before exiting the construction site.
- Exposed surfaces and unpaved roads would be watered three times daily.
- Vehicle travel speed on unpaved roads would be reduced to 15 miles per hour (mph).
- Any dust generation activities will be suspended when wind speed exceed 25 mph.
- All disturbed areas, including storage piles that are not being actively utilized for construction purposes, will be effectively stabilized of dust emissions using water or a chemical stabilizer/suppressant, or covered with a tarp or other suitable cover or vegetative ground cover.
- All onsite unpaved roads and offsite unpaved access roads will be effectively stabilized of dust emissions using water or a chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities will be effectively controlled of fugitive dust emissions by utilizing an application of water or by presoaking. With the demolition of buildings up to six stories in height, all exterior surfaces of the building will be wetted during demolition.
- When materials are transported offsite, all material will be covered or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container will be maintained.
- All operations will limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, piles will be effectively stabilized of fugitive dust emissions utilizing sufficient water or a chemical stabilizer/suppressant.

- Within urban areas, trackout will be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
- Any site with 150 or more vehicle trips per day will implement appropriate measures to prevent carryout and trackout.
- Use of low- or super-compliant VOC (Clean Air) paints, coatings and industrial coatings that meet the regulatory limits in the South Coast Air Quality Management District Rule (Rule 1113).
- Stringent emission standards for mobile non-road diesel engines of almost all types using a tiered phase in of standards. (EPA Rule 40 C.F.R. Part 89, Control of Emissions from New and In-Use Non-road Compression-Ignition Engines)
- Significant reductions in emissions of NOx, particulate matter, and non-methane organic compounds using exhaust treatment on heavy-duty diesel engines manufactured in model year 2007 and later years. (CARB Rule 13 C.C.R. § 1956.8, California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles)

The following two additional mitigation measures were not assumed for the estimation of the base emission rates, as they will apply to the contractor's required reduction in emissions from those of CARB's Off-Road fleet inventory. Prior to the initiation of construction (i.e., after a contractor has been selected), the use of these measures will be revisited, and if feasible, implemented. The implementation of these measures may result in the need for fewer emission offsets (see **Section 12**) to comply with General Conformity requirements.

- **AQ-MM#1: Reduce Criteria Exhaust Emissions from Construction Equipment –** This mitigation measure will apply to heavy-duty construction equipment used during the construction phase. All off-road construction diesel equipment will use the cleanest reasonably available equipment (including newer equipment and/or tailpipe retrofits), but in no case less clean than the average fleet mix as set forth in CARB's Off-Road 2011 Inventory model or 2007 OFFROAD model. The contractor will document efforts it undertook to locate newer equipment (such as, in order of priority, Tier 4, Tier 3 or Tier 2 equipment) and/or tailpipe retrofit equivalents. Contractor shall provide documentation of such efforts, including correspondence with at least two construction equipment rental companies. A copy of each unit's certified tier specification and any required CARB or SJVAPCD operating permit will be made available at the time of mobilization of each piece of equipment. Contractor shall keep a written record (supported by equipment hours meters where available) of equipment usage during Project construction for each piece of equipment.
- **AQ-MM#2: Reduce Criteria Exhaust Emissions from On-Road Construction Vehicles –** This mitigation measure would apply to on-road trucks used to haul construction materials, including fill, ballast, rail ties, and steel. Material hauling trucks would consist of an average fleet mix of equipment model year 2010 or newer, to the extent reasonably practicable. Contractor shall provide documentation of efforts to secure such fleet mix. Contractor shall keep a written record of equipment usage during Project construction for each piece of equipment.

7.0 Regulatory Procedures

The General Conformity regulations establish certain procedural requirements that must be followed when preparing a General Conformity evaluation. This section addresses the major applicable procedural issues and specifies how these requirements are met for the evaluation of the Federal Action. The procedures required for the General Conformity evaluation are similar but not identical to those for conducting an air quality impact analysis pursuant to NEPA regulations. It is anticipated, however, that the Final General Conformity Determination will be published concurrent with the FRA ROD for the Federal Action. This draft General Conformity Determination is being released for public and agency review pursuant to 40 CFR § 93.156.

The Authority identified the appropriate emission estimation techniques and planning assumptions in close consultation with the state entities charged with regulating air pollution in the San Joaquin Valley.

7.1 Use of Latest Planning Assumptions

The General Conformity regulations require the use of the latest planning assumptions for the area encompassing the federal action, derived from the estimates of population, employment, travel, and congestion most recently approved by the area's MPOs (40 CFR § 93.159(a)).

The emission estimation techniques, which were slightly different from those used in establishing the applicable SIP emissions budgets, have been approved by the SJVAPCD (see Final EIR/EIS, Section 3.2). The traffic data used in the air quality analysis (see Final EIR/EIS, Section 3.2) are consistent with the most recent estimates made by the MPOs for traffic volume growth rates, including forecast changes in vehicle miles traveled (VMT) and vehicle hours traveled (VHT). The MPO developed these estimates from their traffic assignment models based on current and future population, employment, and travel and congestion information. These assumptions are consistent with those in the current conformity determinations for the region's Transportation Plan and TIP.

7.2 Use of Latest Emission Estimation Techniques

The General Conformity regulations require the use of the latest and most accurate emission estimation techniques available, unless such techniques are inappropriate (40 CFR § 93.159(b)). Operational phase vehicular emission factors were estimated by using the CARB emission factor program, EMission FACtors 2011 (EMFAC2011), which is the emission model currently used in the preparation of the SIP (CARB 2013c). Parameters were set in EMFAC2011for each individual county to reflect conditions within each county, and statewide parameters were used to reflect statewide conditions.

Emissions from regional building demolition and construction of the at-grade rail segments, elevated rail segments, retained-fill rail segments, traction power substations, and industrial buildings at the HMF/MOWF and HST stations, including parking garages and platform facilities, were calculated using emission factors from CARB's OFFROAD 2011 and 2007 models (CARB 2011d). The OFFROAD 2011 model provides the latest emission factors for construction off-road equipment, and accounts for lower fleet population and growth factors as a result of the economic recession and updated load factors based on feedback from engine manufacturers. For emission rates not available in OFFROAD 2011, rates from OFFROAD 2007 were conservatively applied. The use of emission rates from the OFFROAD models reflects the recommendation of CARB to capture the latest off-road construction assumptions. OFFROAD 2011 default load factors (the ratio of average equipment horsepower utilized to maximum equipment horsepower) and useful life parameters were used for emission estimates. Mobile source emission burdens from worker trips and truck trips were calculated using VMT estimates and appropriate emission factors from EMFAC2011. Fugitive dust emissions from dirt and aggregate handling were calculated using emission factors derived from equations from USEPA's AP-42 (USEPA 2006b).

Construction exhaust emissions from equipment, fugitive dust emissions from earthmoving activities, and emissions from worker trips, deliveries, and material hauling were calculated and compiled in a spreadsheet tool specific to the HST Project for each year of construction. Mobile source emission burdens from worker trips and truck trips were calculated using VMT estimates and appropriate emission factors from EMFAC.

7.3 Major Construction-Phase Activities

Project-specific data, including construction equipment lists and the construction schedule, were used for construction associated with the alignment/guideway. Where Project-specific data were not available, default settings were used. Calculations were performed for each year of construction for the Project between Fresno and Bakersfield.

Major activities were grouped into the following categories (described in more detail in Section 9.0 of this report):

- Mobilization
- Site preparation including demolition, land clearing, and grubbing
- Earth-moving
- Roadway crossings
- Elevated structures
- Track laying – elevated, at-grade and retained fill
- Traction power supply station
- Switching station
- Paralleling station
- HMF – including demolition, building, and track construction
- Fresno Station
- Bakersfield Station
- Hauling emissions – including truck and rail

7.4 Emission Scenarios

The General Conformity regulations require that the evaluation reflect certain emission scenarios (40 CFR §93.159(d)). Specifically, these scenarios generally include the evaluation of the direct and indirect emissions from a proposed Project for the following years: (1) for nonattainment areas, the attainment year specified in the SIP or if the SIP does not specify an attainment year, the latest attainment year possible under the CAA, and for maintenance areas, the farthest year for which emissions are projected in the approved maintenance plan; (2) the year during which the total of direct and indirect emissions for the Federal Action are projected to be the greatest on an annual basis; and (3) any year for which the applicable SIP specifies an emissions budget. Both the operational and construction phases of the Project have to be analyzed, and the following applies to the proposed Project.

- Emissions generated during the operational phase of the HST would meet the emission requirements for the years associated with Items 1 and 3 because the emissions generated during the operational phase of the proposed Project would be less than those emitted in the No-Build scenario (see Final EIR/EIS Section 3.3). In addition, microscale analyses conducted for the EIR/EIS demonstrate that the operational phase of the HST would not cause or exacerbate a violation of the NAAQS for all applicable pollutants (see Final EIR/EIS, Section 3.3.6.3).

- Emissions generated during HST's construction phase, which would include the year with the greatest amount of total direct and indirect emissions (the year 2015, as identified in Item 2), may be subject to General Conformity regulations because they will increase regional emission rates and, as such, have the potential to cause or exacerbate an exceedance of an NAAQS. Therefore, analyses were conducted to estimate the amounts of emissions that would be generated during the construction

phase (for comparison with the General Conformity applicability rates) and the potential impacts of these emissions on local air quality levels. Emissions generated at the construction sites (e.g., tailpipe emissions from the on-site heavy-duty diesel equipment and fugitive dust emissions generated by vehicles traveling within the construction sites) and on the area's roadways by vehicles traveling to and from these sites (by vehicles transporting materials and the workers traveling to and from work) were considered.

- Air quality dispersion modeling would be required for this conformity analysis to estimate the Project's localized impacts on $PM_{2.5}$ and CO concentrations if the annual emissions of the pollutants generated during construction were to exceed the General Conformity *de minimis* thresholds.

Annual emissions were estimated for each year of the proposed Project's construction period. These emissions, which are the maximum values for the Project, are described in more detail in **Section 10.0** of this report.

8.0 Applicability Analysis

The first step in a General Conformity evaluation is an analysis of whether the requirements apply to a proposed federal action in a nonattainment or a maintenance area. Unless exempted by the regulations or otherwise presumed to conform, a federal (non-Transportation) action requires a General Conformity Determination for each pollutant where the total of direct and indirect emissions caused by the federal action would equal or exceed an annual *de minimis* emission rate.

8.1 Attainment Status of Project Area

EPA designates each county (or portions of counties) within California as attainment, maintenance, or nonattainment based on the area's ability to maintain ambient air concentrations below the air quality standards. Areas are designated as attainment if ambient air concentrations of a criteria pollutant are below the ambient standards. Areas are designated as nonattainment if ambient air concentrations are above the ambient standards. Areas previously designated as nonattainment that subsequently demonstrated compliance with the standards are designated as maintenance. Table 4 shows the designation status of the SJVAB for each criteria pollutant.

Table 4
Federal Attainment Status

Pollutant	Federal Classification
O_3	Nonattainment (Extreme)
PM_{10}	Maintenance
$PM_{2.5}$	Nonattainment
CO	Urban portions of Fresno and Kern Counties: Maintenance Remaining Basin: Attainment
NO_2	Attainment
SO_2	Attainment
Source: EPA (2013c).	

Under federal designations, the SJVAB is currently classified as nonattainment for 8-hour O_3,[2] the 1997 $PM_{2.5}$ standard (annual standard of 15 micrograms/cubic meter [µg/m^3]) and the 2006 24-hour $PM_{2.5}$ standard (35 µg/m^3). The SJVAB is a maintenance area for PM_{10}, and the Fresno and Kern County Urbanized Areas are maintenance for CO. The SJVAB is in attainment for the NO_2 and SO_2 standards and unclassified for lead. As such, FRA is required to demonstrate project-level compliance with the General Conformity Rule for NO_x and VOCs , $PM_{2.5}$, PM_{10}, and CO if project-related emissions of these pollutants would exceed the General Conformity *de minimis* thresholds.

[2] It should be noted that, because O_3 is a secondary pollutant (i.e., it is not emitted directly into the atmosphere but is formed in the atmosphere from the photochemical reactions of VOC and NOx in the presence of sunlight), its de minimis threshold is based on primary emissions of its precursor pollutants - NOx and VOCs. If the net emissions of either NOx or VOCs exceeds the de minimis applicability thresholds(EPA 1994), the Federal Action is subject to a general conformity evaluation for O_3.

8.2 Exemptions from General Conformity Requirements

As noted previously, the General Conformity requirements apply to a federal action if the net project emissions equal or exceed certain *de minimis* emission rates. The only exceptions to this applicability criterion are if the activity is on the federal agency's presumed-to-conform list (40 CFR § 93.153(f)), meets the narrow exemption for federal actions in response to an emergency or disaster (40 CFR § 93.153(e)), or is one of the following topical exemptions:

- Actions that would result in no emissions increase or an increase in emissions that is clearly below the *de minimis* levels (40 CFR § 93.153(c)(2)). Examples include administrative actions and routine maintenance and repair.
- Actions where the emissions are not reasonably foreseeable (40 CFR § 93.153(c)(3)).
- Actions which implement a decision to conduct or carry out a conforming program (40 CFR § 93.153 (c)(4)).
- Actions which include major new or modified sources requiring a permit under the New Source Review (NSR) program (40 CFR § 93.153(d)(1)).
- Actions in response to emergencies or natural disasters (40 CFR § 93.153(d)(2)).
- Actions which include air quality research not harming the environment (40 CFR § 93.153(d)(3)).
- Actions which include modifications to existing sources to enable compliance with applicable environmental requirements (40 CFR § 93.153(d)(4)).
- Actions which include emissions from remedial measures carried out under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) that comply with other applicable requirements (40 CFR § 93.153(d)(5)).

However, the Project does not meet any of these exempt categories. In addition, FRA has not established a presumed-to-conform list of activities at the time of this evaluation and the Project does not meet the requirements of 40 CFR § 93.153(e).

8.3 Applicability for Federal Action

After determining that the Project is not otherwise exempt, the applicability of the General Conformity requirements to the Federal Action was evaluated by comparing the total of direct and indirect emissions for the calendar year of greatest emissions to the General Conformity *de minimis* thresholds. Where the total of direct and indirect emissions attributable to the Federal Action were found to be below the *de minimis* emission rates for a pollutant, that pollutant is excluded from General Conformity requirements and no further analysis is required. However, when the emissions of an applicable pollutant are at or above a *de minimis* threshold, that pollutant must undergo a General Conformity evaluation.

8.4 *De minimis* Emission Rates

The General Conformity requirements will apply to the Federal Action for each pollutant for which the total of direct and indirect emissions caused by the Federal Action equal or exceed the *de minimis* emission rates shown below. These emission rates are expressed in units of tons per year (tpy) and are compared to the total of direct and indirect emissions caused by the Project for the calendar year during which the net emissions are expected to be the greatest. The applicable threshold levels for the pollutants for which General Conformity is required in the Project area are shown in Table 5.

Table 5
De Minimis Rates for Determining Applicability of General Conformity Requirements to Federal Actions

Pollutant	Applicability Threshold	Attainment Status
Nitrogen Oxides (NO_x)	10 tons per year	Nonattainment (Extreme)
Volatile Organic Compounds (VOCs)	10 tons per year	
Particulate Matter Smaller than 2.5 Microns ($PM_{2.5}$)	100 tons per year	Nonattainment
Particulate Matter Smaller than 10 Microns (PM_{10})	100 tons per year	Maintenance
Carbon Monoxide (CO)	100 tons per year	Urban portions of Fresno and Kern Counties: Maintenance Remaining Basin: Attainment
Source: 40 CFR 93.153		

9.0 Construction Activities Considered

As shown in Section 3.3.6 of the Final EIR/EIS, the results of the regional analyses conducted for the proposed Project demonstrate that emissions generated during the operational phase would be less than those emitted in the No-Build and existing conditions scenarios and that the microscale analyses demonstrate that the Project would not cause or exacerbate a violation of the NAAQS for these pollutants. As such, no further analysis of the operational period emissions is necessary for this General Conformity determination. This Section 9.0 will focus on the emissions generated from the construction period emissions for the Fresno to Bakersfield Project.

The analysis conducted for the Final EIR/EIS to estimate potential air quality impacts caused by on-site (e.g., demolition activities, construction equipment operations, and truck movements) and off-site (e.g., motor vehicle traffic effects due to truck trips) construction-phase activities included the following:

- Estimation of emissions generated by the construction activities (e.g., deconstruction, concrete and steel construction), including fugitive dust emissions and emissions released from diesel-powered equipment and trucks based on the hours of operation of each piece of equipment;
- Identification of heavily traveled truck routes to estimate the cumulative effects of on-site construction activity emissions and off-site traffic emissions;
- An on-site dispersion modeling analysis of the major construction areas;
- An off-site dispersion modeling analysis of the roadway intersections/interchanges adjacent to the construction areas using traffic data that include construction-related vehicles and background traffic; and
- A comparison of the on-site and off-site modeling results to the applicable NAAQS for the applicable pollutants.

Emission rates for these activities were estimated based on the following:

- The number of hours per day and duration of each construction activity;
- The number and type of construction equipment to be used;
- Horsepower (HP) and utilization rates (hours per day) for each piece of equipment;
- The quantities of construction/demolition material produced and removed from each site; and
- The number of truck trips needed to remove construction/demolition material, and to bring the supply materials to each site.

The following is a discussion of the major activities considered, the timing of these activities, and the procedures used to estimate emission rates.

A full description of construction analysis methodology can be found in Section 6.8 of the *Fresno to Bakersfield Section Air Quality Technical Report* for this Project (Authority and FRA 2014).[3]

[3] Available online at http://www.hsr.ca.gov/Programs/Environmental_Planning/index.html.

9.1 Mobilization

Mobilization would take approximately 4 months, beginning in April 2014 and ending in July 2014. Emissions associated with mobilization were calculated using OFFROAD 2011 emission factors. Fugitive dust from mobilization includes worker trips and construction equipment exhaust. Four main site areas were assumed for the Fresno to Bakersfield Section of the HST alignment.

9.2 Site Preparation

9.2.1 Demolition

Demolition of existing structures along the HST alignment and HST stations would occur in 2014. Demolition emissions were calculated using OFFROAD 2011 emissions factors. In addition to the fugitive dust emissions resulting from the destruction of existing buildings, emissions were estimated for worker trips, construction equipment exhaust, and truck-hauling exhaust.

9.2.2 Land Grubbing

Land grubbing refers to the site preparation activities for the HST alignment construction. Emissions from land grubbing were estimated using the OFFROAD 2011 emission factors as well as a site-specific equipment list. Land grubbing was assumed to take place at four staging areas in 2014. Fugitive dust from land-grubbing activities includes that from worker trips, construction equipment exhaust, and truck-hauling exhaust.

9.3 Earth Moving

The earthmoving activities include grading, trenching, and cut/fill activities for the alignment construction. Earthmoving would occur at four locations from November 2014 to November 2016. The emissions associated with the earthmoving activities were estimated using OFFROAD 2011 emission factors as well as a site-specific equipment list. Fugitive dust from land-grubbing activities includes that from worker trips, construction equipment exhaust, and truck-hauling exhaust.

9.4 HST Alignment Construction

The HST alignment construction is expected to occur from 2014 to 2017, and includes the following construction phases and operation of a concrete batch plant:

- Constructing structures for the elevated rail.
- Laying elevated rail and at-grade rail.
- Constructing the retaining wall for the retained-fill rail.
- Laying retained-fill rail.

9.4.1 Rail Type and Alignment Alternatives

Three rail types (elevated, at-grade, and retained fill) for the worst case alternative were considered in this analysis. The worst case alternative is considered the “BNSF Alternative” because it is estimated to have the longest length of track. The length of the alignment for alternatives that deviate from the BNSF Alternative is comparable to the length of the equivalent section of the BNSF Alternative. Therefore, construction emissions from construction of the BNSF Alternative are expected to be similar to the construction emissions for the other alternatives. The BNSF Alternative is the only alignment analyzed for construction emissions and all alternatives are assumed to have the same construction emissions as the BNSF Alternative. Emissions were taken as the sum of the at-grade, elevated, and retained-fill emissions.

9.4.2 Concrete Batch Plants

Concrete would be required for construction of bridges used to support the elevated sections of the alignment, for construction of the station platform, and for construction of the retaining wall used to support the retained-fill sections of the alignment. To provide enough onsite concrete, it was estimated that three batch plants would operate in the Project area during construction of the alignment sections. Fugitive dust emissions associated with the plants were estimated based on the total amount of concrete required and on emission factors from Chapter 11.12 of AP-42 (USEPA 2006a). Emissions from on-road truck trips associated with transporting material to and from the concrete batch plants were included in the analysis and are discussed below.

9.4.3 Material Hauling

Emissions from the exhaust of trucks used to haul material (including concrete slabs) to the construction site were calculated using heavy-duty truck emission factors from EMFAC2011 and anticipated travel distances of haul trucks within the San Joaquin Valley Air Basin (SJVAB).

As part of the NEPA and CEQA analysis, the Final EIR/EIS calculates the potential construction period emissions resulting from hauling ballast (i.e., generally, the rocks that lie under railroad ties and rails) materials from quarries outside of the San Joaquin Air Basin. In order to take a conservative approach to calculating potential construction emissions, the analysts ran five different scenarios using reasonable assumptions for delivery of the ballast materials (i.e. different configurations of delivery by train and diesel truck from different quarry sources in different air basins). Emissions from the exhaust of trucks used to deliver the ballast was calculated using the heavy-duty truck emission factors from EMFAC2011, rail emission factors from the USEPA document, Emission Factors for Locomotives (USEPA 2009c), and the travel distance by rail to the Project site were used to estimate rail emissions. This analysis resulted in at least one scenario that would not result in exeedance of any of the NAAQS thresholds in any of the surrounding air basins containing ballast-source quarries. This scenario relies on the delivery of ballast from sources closest to the Project and when those sources are exhausted then they are supplemented by the importation of ballast from outside the air basin by trucks (Fresno to Bakersfield Section Air Quality Technical Report, Appendix G, “Quarry and Ballast Hauling Memorandum” March 2012). It is not possible to conclude that the future construction contractor would select this scenario, because the difference in cost between the scenarios is not substantially different. However, because no one scenario is clearly superior from a cost perspective, it is reasonable to assume that the contractor might select this scenario especially because it relies on the delivery of ballst from sources closest to the Project.

While the information developed for the EIR/EIS helps agency decisionmakers understand a range of potential scenarios and resulting emissions, it is impossible to know the exact source or method of transportation for the ballast material and therefore FRA cannot determine, with certainty, whether those emissions would result in exceedance of the General Conformity thresholds. However, as a condition of project approval the Authority will ensure that the delivery of the ballast material will not result in exeedance of any of the conformity thresholds in surrounding air basins that are nonattainment or maintenance status. If this is not reasonably possible or is materially more costly, prior to engaging in any activity that would result in emissions that exceed conformity thresholds in a nonattainment or maintenance area in the surrounding air basins, the Authority will secure the production or generation of offsets necessary to achieve conformity.

9.5 Train Station Construction

Emissions from HST station construction would be a result of mass site grading, building construction, and architectural coatings. Where applicable, emissions resulting from worker trips, vendor trips, and construction equipment exhaust were included. Paving activities were not considered because surface

parking lots are not expected to be part of the construction; only parking structures with emissions captured during the building construction phase were included.

Construction of the Fresno HST station would begin in June 2017 and be completed by April 2020. Construction of the Bakersfield HST station would begin in June 2018 and be completed by April 2021. Construction of the Kings/Tulare Station would begin in June 2020 and be completed by April 2023. OFFROAD 2011 was used to estimate emissions from construction phases of the HST stations.

9.6 Maintenance of Way Facility Construction

Emissions associated with construction of the MOWF are expected as a result of mass site grading, asphalt paving, building construction, and architectural coatings. Emissions would also result from construction of the at-grade MOWF Access Guideway rail.

Construction of the MOWF would begin in May 2017 and be completed by the end of 2018. OFFROAD 2011 was used to estimate emissions from construction of the MOWF. Fugitive dust from construction of the MOWF includes that from worker trips, construction equipment exhaust, and truck-hauling exhaust. Emissions from track construction were estimated using the same approach described for the HST alignment construction.

9.7 Heavy Maintenance Facility Construction

Emissions associated with construction of the HMF are expected as a result of mass site grading, asphalt paving, building construction, and architectural coatings. Emissions would also result from construction of the HMF Access Guideway rail. OFFROAD 2011 was used to estimate emissions from constructing the HMF. Construction of the HMF facility would occur from approximately May 2017 to October 2018. Construction of the HMF track would occur from June 2018 to October 2018. Fugitive dust from construction of the HMF includes that from worker trips, construction equipment exhaust, and truck-hauling exhaust.

9.8 Power Distribution Station Construction

Emissions associated with construction of the traction power substations, switching stations, and paralleling stations would be from mass site grading, building construction, and architectural coatings. Paving activities were not considered because these stations would not have paved areas and access roads would be covered with gravel.

A total of 17 power distribution station sites were analyzed for construction emissions using OFFROAD 2011 emission factors. The analysis assumed that station sites 1 through 15 would be constructed from October 2017 to May 2018, and the remaining two sites (16 and 17) would be constructed between October 2018 and May 2019. Fugitive dust from construction of the power distribution stations includes that from worker trips, construction equipment exhaust, and truck-hauling exhaust.

9.9 Roadway Construction

The HST alternatives would include construction easement, easement for columns within a state facility, or modification of overcrossings or interchanges. Based on Project-specific data, four staging areas for roadway construction were analyzed. Construction of roadway crossings would occur simultaneously at all staging areas from November 2014 to November 2016. Fugitive dust from construction of the roadway crossings includes that from worker trips, construction equipment exhaust, and truck-hauling exhaust.

9.10 Demobilization

Demobilization (of the alignment construction) would occur at four different locations from October 2016 to January 2017 (Sites 1 and 2) and January 2017 to April 2017 (Sites 3 and 4). Emissions associated with demobilization were calculated using OFFROAD 2011. Fugitive dust from demobilization includes that from worker trips and construction equipment exhaust.

10.0 Estimated Emission Rates and Comparison to *De Minimis* Thresholds - Fresno-Bakersfield

Total annual estimated emissions generated within the SJVAB during the proposed Project's construction period, as presented in the HST Final EIR/EIS, are provided in Table 6. These values are the peak on-site emissions during each analysis year plus maximum annual off-site emissions. As shown in the table, the annual construction emissions of the Fresno to Bakersfield Section would exceed the thresholds for NOx in the years 2014 through 2018, as well as in 2021, and for VOCs in the years 2014 through 2017. The maximum estimated annual values of each pollutant, by non-attainment or maintenance area, and the percent of the 2010 estimated emission rates in the SJVAB (see Table 3) for the Fresno to Bakersfield construction are as follows:

- NOx: 618 tpy (0.32%)
- VOCs: 37 tpy (0.02%)
- $PM_{2.5}$: 31 tpy (0.06%)
- PM_{10}: 68 tpy (0.06%)
- CO: 72 tpy – Fresno Maintenance Area (0.01%)
- CO: 62 tpy –Bakersfield (Kern County) Maintenance Area (0.01%)

For the Fresno to Bakersfield portion of the HST system, the lengths of the alignments for the alternatives that deviate from the BNSF Alternative are comparable to the lengths of the equivalent sections of the BNSF Alternative. Therefore, construction emissions from the construction of the BNSF Alternative are expected to be similar to the construction emissions of the other alternatives. The lengths of the Corcoran Elevated Alternative, the Corcoran Bypass Alternative, the Hanford West Bypass 1 Alternative, the Hanford West Bypass 2 Alternative, the Bakersfield Hybrid, and the Bakersfield South Alternative have the same lengths as the corresponding section of the at-grade and elevated alignments for the BNSF Alternative. The total alignment for the Wasco-Shafter Bypass Alternative is approximately 5% shorter than the total at-grade and elevated length of the corresponding section of the BNSF Alternative. All alternatives would have the same construction emissions for all Project components.

Table 6
Fresno to Bakersfield Annual Construction-phase Emissions

Pollutant		Emissions (Tons/Year)										Conformity Applicability Thresholds (tons/year)
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
NO_x		**380.80**	**617.99**	**500.73**	**161.43**	**70.89**	4.17	1.95	**79.74**	0.53	0.19	10
VOCs		**16.86**	**36.69**	**32.27**	8.51	3.89	0.42	0.25	3.87	0.09	0.03	10
$PM_{2.5}$*		13.40	30.85	27.22	12.03	9.67	6.94	0.14	2.49	0.05	0.02	100
PM_{10}		42.66	67.63	60.47	15.79	14.90	8.63	2.95	4.33	0.13	0.08	100
CO**	Fresno	27.67	72.31	65.63	12.17	3.92	1.31	1.43	8.85	0.00	0.00	100
	Bakersfield	26.95	62.12	57.37	15.31	3.74	1.70	1.21	9.26	0.00	0.00	100

Note: **Bold** values exceed applicability thresholds
* Includes sulfur dioxide emission rates as a partial precursor to $PM_{2.5}$ (i.e., it was conservatively assumed that 100% of SO_2 emissions becomes $PM_{2.5}$)
** Fresno and Bakersfield urbanized maintenance areas only

11.0 Regional Effects

As shown in Section 3.3-6 of the FEIS, the total regional emissions for all of the applicable pollutants are lower during the operations phase of the HST Project than under No-Build conditions (and will therefore not exceed the *de minimis* emission thresholds). As such, only emissions generated during the construction phase were compared to the conformity threshold levels to determine conformity compliance. As shown in Table 6, construction-phase emissions, compared to the General Conformity applicability rates, are as follows:

- Annual estimated NO_x emissions are greater than the applicability rate of 10 tons per year in years 2014 through 2018, as well as in 2021;
- Annual estimated VOC emissions are greater than the applicability rate of 10 tons per year in years 2014 through 2016; and
- Annual estimated $PM_{2.5}$, PM_{10}, and CO emissions are less than the applicability rate of 100 tons per year in all years.

As such, a General Conformity Determination is required for this project for NO_x and VOCs for the years during construction where the emissions would exceed the *de minimis* thresholds and do not meet any of the exceptions cited in 40 CFR § 93.154(c). This draft Conformity Determination identified the Authority's commitment to reduce all NO_x and VOC emissions through emissions offsets using a VERA with the SJVAPCD, explained in **Section 12.2** below.

12.0 General Conformity Evaluation

For federal actions subject to a General Conformity evaluation, the regulations delineate several ways an agency can demonstrate conformity (40 CFR § 93.158). This section summarizes the findings that were used to make the determination for the HST Project.

12.1 Conformity Requirements of Proposed Project

Based on the results shown in Table 6, conformity determinations are required for construction-phase emissions for:

- NO_x – because annual estimated emissions are greater than the applicability rate of 10 tons per year for years 2014 through 2018, as well as in 2021; and
- VOCs – because annual estimated emissions are greater than the applicability rate of 100 tons per year for years 2014 through 2016.

12.2 Compliance with Conformity Requirements

To support this draft General Conformity Determination, the FRA demonstrates herein that the emissions of NO_x and VOCs (a precursor to O_3) caused by the construction of the proposed Project will not result in an increase in regional NO_x and VOC emissions. This will be achieved by off-setting the NO_x and VOC emissions generated by the construction of the HST in a manner consistent with the General Conformity regulations.

The offsets are anticipated to be accomplished through a VERA between the Authority and the SJVAPCD. The requirement for the VERA would be implemented as part of the Project as described in the mitigation measure from the Final EIR/EIS:

> **AQ-MM#4: Offset Project Construction Emissions through an SJVAPCD Voluntary Emission Reduction Agreement (VERA).** The Authority and SJVAPCD will enter into a contractual agreement to mitigate the Project's emissions by providing funds for the district's Emission Reduction Incentive Program (SJVAPCD 2011) to fund grants for Projects that achieve emission reductions, thus offsetting Project-related impacts on air quality. The Project will commit to reduce construction emissions for NO_x and VOC through the VERA program.

A VERA is an enforceable mitigation measure by which the Project proponent will provide pound-for-pound offsets of emissions that exceed General Conformity thresholds through a process that develops, funds, and implements emissions reduction Projects, with the SJVAPCD serving role of administrator of the emissions reduction Projects and verifier of the successful mitigation effort.

To implement a VERA, the Authority and the SJVAPCD enter into a contractual agreement in which the proponent agrees to mitigate the Project's emissions (NO_x and VOCs, in this case) by providing funds for the SJVAPCD's Emission Reduction Incentive Program to fund grants for Projects that achieve emission reductions, thus offsetting Project-related impacts on air quality. The SJVAPCD is obligated under the VERA to seek and implement such reductions, using the Project proponent's funds. The types of projects that have been used in the past to achieve such reductions include electrification of stationary internal combustion engines (such as agricultural irrigations pumps); replacing old trucks with new, cleaner, more efficient trucks; and a host of other emissions-reducing projects.

In implementing a VERA, the SJVAPCD verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the enforceability of achieved reductions. The initial agreement is generally based on the projected maximum emissions that exceed thresholds as calculated by a District-approved Air Quality Impact Assessment

and/or the project's EIR/EIS; the agreement then requires the proponent to deposit funds sufficient to offset those maximum emissions exceedances. However, because the goal is to mitigate actual emissions, the District has designed adequate flexibility into these agreements such that the final mitigation is based on actual emissions related to the project, based on actual equipment used, hours of operation, etc. that the proponent tracks and reports to SJVAPCD during construction. After the project is mitigated, the District certifies to the lead agency that the mitigation is completed. Thus, a VERA provides the Authority and FRA with an enforceable mitigation measure that will result in emissions exceedances being fully offset.

According to the SJVAPCD, since 2005 the SJVAPCD has entered into seventeen VERAs with project proponents and achieved 1,393 tons of NO_x and PM_{10} reductions per year. It is the SJVAPCD's experience that implementation of a VERA is a feasible mitigation measure which effectively achieves actual emission reductions, mitigating the project to a net-zero air quality impact. Furthermore, the SJVAPCD has stated that it is certain that there are enough emissions reductions projects within its air basin to fully offset the project's NO_x and VOC exceedances.[4]

12.3 Consistency with Requirements and Milestones in Applicable SIP

The general conformity regulations state that notwithstanding the other requirements of the rule, a Federal action may not be determined to conform unless the total of direct and indirect emissions from the Federal action is in compliance or consistent with all relevant requirements and milestones in the applicable SIP (40 C.F.R. § 93.158(c)). This includes but is not limited to such issues as reasonable further progress schedules, assumptions specified in the attainment or maintenance demonstration, prohibitions, numerical emission limits, and work practice standards. This section briefly addresses how the construction emissions for the project were assessed for SIP consistency for this evaluation.

12.3.1 Applicable Requirements from EPA

The EPA has already promulgated, and will continue to promulgate, numerous requirements to support the goals of the Clean Air Act with respect to the NAAQS. Typically, these requirements take the form of rules regulating emissions from significant new sources, including emission standards for major stationary point sources and classes of mobile sources as well as permitting requirements for new major stationary point sources. Since states have the primary responsibility for implementation and enforcement of requirements under the Clean Air Act and can impose stricter limitations than the EPA, the EPA requirements often serve as guidance to the states in formulating their air quality management strategies.

12.3.2 Applicable Requirements from CARB

In California, to support the attainment and maintenance of the NAAQS, CARB is primarily responsible for regulating emissions from mobile sources. In fact, the EPA has delegated authority to the CARB to establish emission standards for on-road and some non-road vehicles separate from the EPA vehicle emission standards, although the CARB is preempted by the Clean Air Act from regulating emissions from many non-road mobile sources, including marine craft. Emission standards for preempted equipment can only be set by the EPA.

[4] The information in this general conformity determination regarding the VERA and the SJVAPCD's Grant Incentives Program comes from (a) www.valleyair.org/Grant_Programs/GrantPrograms.htm, (b) the SJVAPCD's October 12, 2011 comment letter on the Fresno to Bakersfield Draft EIR/EIS document and (c) telephone discussions with the SJVAPCD.

12.3.3 Applicable Requirements from SJVAPCD

To support the attainment and maintenance of the NAAQS in the SJVAB, the SJVAPCD is primarily responsible for regulating emissions from stationary sources. As noted above, SJVAPCD develops and updates its Air Quality Management Plan (AQMP) regularly to support the California SIP. While the AQMP contains rules and regulations geared to attain and maintain the NAAQS, these rules and regulations also have the much more difficult goal of attaining and maintaining the California ambient air quality standards.

12.3.4 Consistency with Applicable Requirements for the Authority

The Authority already complies with, and will continue to comply with, a myriad of rules and regulations implemented and enforced by Federal, state, regional, and local agencies to protect and enhance ambient air quality in the SJVAB.

In particular, due to the long persistence of challenges to attain the ambient air quality standards in the SJVAB, the rules and regulations promulgated by CARB and SJVAPCD are among the most stringent in the U.S.

The Authority will continue to comply with all existing applicable air quality regulatory requirements for activities over which it has direct control and will meet in a timely manner all regulatory requirements that become applicable in the future.

These are appropriate EPA, CARB, and SJVAPCD rules which are standard practice and BMPs for construction in the SJVAPCD and include control of emissions, exhaust---such as:

- SJVAPCD Rule 2201, New and Modified Stationary Source Review; applies to new or modified stationary sources and requires that sources not increase emissions above the specified thresholds. If the post-project stationary source potential to emit equals or exceeds the offset threshold levels, offsets will be required (SJVAPCD 2008). Stationary sources at the station (such as natural gas heaters) would need to be permitted by the SJVAPCD and would have to comply with best available control technology (BACT) requirements. Many stationary sources would be associated with heavy maintenance facility (HMF) activities, such as exterior washing, welding, material storage, cleaning solvents, abrasive blasting, painting, oil/water separation, and wastewater treatment and combustion. Permits would need to be obtained for equipment associated with these activities from the SJVAPCD and would need to comply with BACT requirements.
- SJVAPCD Rule 2280, Portable Equipment Registration; requires portable equipment used at project sites for less than 6 consecutive months must be registered with SJVAPCD. The district will issue the registrations 30 days after the receipt of the application (SJVAPCD 1996).
- SJVAPCD Rule 2303, Mobile Source Emission Reduction Credits; The project may qualify for SJVAPCD vehicle emission reduction credits if it meets the specific requirements of Rule 2303 for any of the following categories (SJVAPCD 1994):
    - Low-Emission Transit Buses.
    - Zero-Emission Vehicles.
    - Retrofit Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.
    - Retrofit Heavy-Duty Vehicles
- SJVAPCD Rule 4201 and Rule 4202, Particulate Matter Concentration and Emission Rates; applies to operations that emit or may emit dust, fumes, or total suspended particulate matter. Particulate emissions from the project must be less than the specified emissions limit (SJVAPCD 1992a, 1992b).

- SJVAPCD Rule 4301, Fuel Burning Equipment; limits the emissions from fuel-burning equipment whose primary purpose is to produce heat or power by indirect heat transfer. The project will comply with the emission limits (SJVAPCD 1992c).
- SJVAPCD Rule 8011, General Requirements–Fugitive Dust Emission Sources; applicable to outdoor fugitive dust sources. Operations, including construction operations, must control fugitive dust emissions in accordance with SJVAPCD Regulation VIII (SJVAPCD 2004a). According to Rule 8011, the SJVAPCD requires the implementation of control measures for fugitive dust emission sources. The project would also implement the mandatory control measures listed in Table 6-2 in the *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) (SJVAPCD 2002) to reduce fugitive dust emissions. These measures are not considered mitigation measures because they are required by law.

  Many of the control measures required by the SJVAPCD are the same or similar to the control measures listed in the Statewide Program EIR/EIS. The SJVAPCD Rule 8011 requirements are listed below:

  - All disturbed areas, including storage piles, which are not being actively used for construction purposes, will be effectively stabilized for dust emissions using water or a chemical stabilizer/suppressant, or covered with a tarp or other suitable cover or vegetative ground cover.
  - All onsite unpaved roads and offsite unpaved access roads will be effectively stabilized for dust emissions using water or a chemical stabilizer/suppressant.
  - All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities will be effectively controlled of fugitive dust emissions by utilizing an application of water or by presoaking.
  - With the demolition of buildings up to six stories in height, all exterior surfaces of the building will be wetted during demolition.
  - All materials are transported offsite will be covered or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container will be maintained.
  - All operations will limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.
  - Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, piles will be effectively stabilized of fugitive dust emissions utilizing sufficient water or a chemical stabilizer/suppressant.
  - Within urban areas, trackout will be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
  - Any site with 150 or more vehicle trips per day will prevent carryout and trackout.
- SJVAPCD Rule 9510, Indirect Source Review; applies to any transportation project in which construction emissions equal or exceed 2 tons of NO_x or PM_{10} per year. Construction of the HST alignment (specifically, onsite off-road construction exhaust emissions) would be subject to ISR. Accordingly, the Authority would have to submit an Air Impact Assessment (AIA) application to the SJVAPCD with commitments to reduce construction exhaust NO_x and PM_{10} emissions by 20% and 45%, respectively. According to SJVAPCD, if successful, AQ-MM#1 (use of cleaner-burning

construction equipment) might, as a practical matter, satisfy these numerical reduction requirements; if not, AQ-MM#4 (offset project construction emissions through an SJVAPCD VERA) would satisfy the ISR requirements. Operation of the HST would be exempt under sections 4.1 and 4.2 of Rule 9510.

- SJVAPCD CEQA Guidelines; The SJVAPCD prepared the *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) to assist lead agencies and project applicants in evaluating the potential air quality impacts of projects in the SJVAB (SJVAPCD 2002). The GAMAQI provides SJVAPCD-recommended procedures for evaluating potential air quality impacts during the CEQA environmental review process. The GAMAQI provides guidance on evaluating short-term (construction) and long-term (operational) air emissions. The GAMAQI is currently being updated, but the most recent version (2002) was used in this evaluation and contains guidance on the following:
  - Criteria and thresholds for determining whether a project may have a significant adverse air quality impact.
  - Specific procedures and modeling protocols for quantifying and analyzing air quality impacts.
  - Methods to mitigate air quality impacts.
  - Information for use in air quality assessments and environmental documents that will be updated more frequently, such as air quality data, regulatory setting, climate, and topography.
  - EPA Rule 40 C.F.R. Part 89, Control of Emissions from New and In-Use Non-road Compression-Ignition Engines: requires stringent emission standards for mobile non-road diesel engines of almost all types using a tiered phase in of standards.
  - CARB Rule 13 C.C.R. § 1956.8, California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles: requires significant reductions in emissions of NOx, particulate matter, and non-methane organic compounds using exhaust treatment on heavy-duty diesel engines manufactured in model year 2007 and later years.

13.0 Estimated Emission Rates and Comparison to *De Minimis* Thresholds – Cumulative Analysis

The study area for cumulative air quality impacts is the San Joaquin Valley Air Basin (SJVAB). While separate projects for purposes of planning the HST System, construction of the Fresno to Bakersfield Section would overlap with the construction period for the Merced to Fresno Section, thereby adding to the cumulative air quality impacts within the SJVAB. For purposes of full disclosure of the potential impacts, the cumulative emissions that could result from potential concurrent construction activities are presented here. As the analysis demonstrates, even where concurrent construction will occur there would be no new pollutants exceeding the de minimis thresholds. In addition, as a practical matter all construction period emissions will be fully offset as a result of the VERA between the Authority and the SJVAPCD.

The total annual estimated emissions generated within the SJVAB during construction of the Merced to Fresno Section are provided in Table 7. The total annual estimated emissions generated within the SJVAB during the construction of the combined Merced to Bakersfield sections (Merced to Fresno plus Fresno to Bakersfield) are provided in Table 8. As shown in this table, the combined annual construction emissions of the two sections would exceed the thresholds for NOx in the years 2014 through 2021 and VOCs in the years 2014 through 2017 and 2019.

These values are the peak on-site emissions during each analysis year plus maximum annual off-site emissions. The maximum estimated annual values of each pollutant, by non-attainment or maintenance area, and the percent of the 2010 estimated emission rates in the SJVAB (see Table 3) for the combined (Merced to Bakersfield) construction are as follows:

- NOx: 728 tpy (0.37%)
- VOCs: 48 tpy (0.02%)
- $PM_{2.5}$: 37 tpy (0.08%)
- PM_{10}: 76 tpy (0.06%)
- CO: 95 tpy – Fresno Maintenance Area (0.02%)
- CO: 62 tpy – Bakersfield (Kern County) Maintenance Area (0.01%)

For the Merced to Fresno segment of the HST system, construction emission rates were estimated in the EIR/EIS for each of the six alternatives/options previously under consideration for the Merced to Fresno Section. However, only those values associated with the Preferred Alternative are included in this Conformity Determination. These values represent the Preferred Alternative with the Avenue 21 wye option, because that option has the highest estimated emissions. If the Avenue 24 wye option is selected, the estimated emission rates will be lower than those presented in this determination.

Portions of the San Jose to Merced, Bakersfield to Palmdale and Sacramento to Merced sections of the HST would also be constructed within the SJVAB. It is possible that the schedule for construction of these sections could overlap with construction of the Merced to Fresno and Fresno to Bakersfield sections, contributing to the cumulative annual emissions totals of HST construction in the SJVAB. Construction emissions estimates of other sections in the SJVAB are provided in Tables 9 to 11. These estimates were developed based upon the comparison of track miles for those sections with the track miles for the Fresno to Bakersfield portion of the HST system.

Table 7
Merced to Fresno Annual Construction-phase Emissions

Pollutant	Emissions (Tons/Year)										Conformity Applicability Thresholds (tons/year)
	2014**	2015	2016	2017	2018	2019	2020	2021	2022	2023	
NO_x	**168.60**	**109.5**	**114.52**	**32.02**	**13.34**	**49.35**	**15.14**	7.36	3.96	0.00	10
VOCs	**15.11**	**11.07**	8.33	2.42	1.73	**10.83**	1.81	1.01	4.90	0.00	10
$PM_{2.5}$*	8.04	5.84	4.29	1.72	0.57	2.94	0.97	0.46	1.98	0.00	100
PM_{10}	13.15	8.79	5.51	3.86	0.83	6.13	1.89	0.61	8.89	0.00	100
CO (entire study area)	66.56	49.24	31.51	11.40	7.65	32.42	18.41	11.58	2.51	0.00	-
CO (maintenance area only)***	28.62	22.31	11.49	4.42	2.27	5.01	3.75	1.26	0.54	0.00	100

Note: **Bold** values exceed applicability thresholds
* Includes sulfur dioxide emission rates as a partial precursor to $PM_{2.5}$ (i.e., it was conservatively assumed that 100% of SO_2 emissions becomes $PM_{2.5}$)
** 2014 emissions include the emissions estimated for 2013in the Merced to Fresno Final EIR/EIS since no construction activities occurred in 2013.
*** Only the Fresno Urbanized Area is a CO maintenance area, therefore only emissions in this area are subject to the conformity applicability thresholds

Table 8
Merced to Bakersfield (Merced to Fresno plus Fresno to Bakersfield) Annual Construction-phase Emissions

Pollutant		Emissions (Tons/Year)										Conformity Applicability Thresholds (tons/year)
		2014**	2015	2016	2017	2018	2019	2020	2021	2022	2023	
NO_x		**549.40**	**727.50**	**615.25**	**193.45**	**84.23**	**53.52**	**17.09**	**87.10**	4.49	0.19	10
VOCs		**31.97**	**47.77**	**40.60**	**10.92**	5.62	**11.25**	2.06	4.88	4.99	0.03	10
$PM_{2.5}$*		21.55	36.77	31.56	13.79	10.24	9.91	1.16	2.99	2.03	0.02	100
PM_{10}		55.81	76.43	65.98	19.65	15.73	14.76	4.84	4.93	9.02	0.08	100
CO***	Fresno	56.29	94.62	77.12	16.59	6.19	6.33	4.18	10.11	0.54	0.00	100
	Bakersfield	26.95	62.12	57.37	15.31	3.74	1.70	1.21	9.26	0.00	0.00	100

Note: **Bold** values exceed applicability thresholds
* Includes sulfur dioxide emission rates as a partial precursor to $PM_{2.5}$ (i.e., it was conservatively assumed that 100% of SO_2 emissions becomes $PM_{2.5}$)
** 2014 emissions include the 2013 estimates from the Merced to Fresno Final EIR/EIS
*** Fresno and Bakersfield urbanized maintenance areas only

Table 9
Bakersfield to Palmdale in SJVAPCD – Estimates of Annual Construction-phase Emissions

Pollutant	Emissions (Tons/Year)					Conformity Applicability Thresholds (tons/year)
	2016	2017	2018	2019	2020	
NO_x	**70.18**	**70.18**	**70.18**	**70.18**	**70.18**	10
VOCs	3.97	3.97	3.97	3.97	3.97	10
$PM_{2.5}$*	3.97	3.97	3.97	3.97	3.97	100
PM_{10}	8.40	8.40	8.40	8.40	8.40	100
CO	29.21	29.21	29.21	29.21	29.21	100

Note: **Bold** values exceed applicability thresholds
* Includes sulfur dioxide emission rates as a partial precursor to $PM_{2.5}$ (i.e., it was conservatively assumed that 100% of SO_2 emissions becomes $PM_{2.5}$)

Table 10
San Jose to Merced in SJVAPCD – Estimates of Annual Construction-phase Emissions

Pollutant	Emissions (Tons/Year)							Conformity Applicability Thresholds (tons/year)
	2019	2020	2021	2022	2023	2024	2025	
NO_x	**70.64**	**70.64**	**70.64**	**70.64**	**70.64**	**70.64**	**70.64**	10
VOCs	4.00	4.00	4.00	4.00	4.00	4.00	4.00	10
$PM_{2.5}$*	3.99	3.99	3.99	3.99	3.99	3.99	3.99	100
PM_{10}	8.45	8.45	8.45	8.45	8.45	8.45	8.45	100
CO	29.40	29.40	29.40	29.40	29.40	29.40	29.40	100

Note: **Bold** values exceed applicability thresholds
* Includes sulfur dioxide emission rates as a partial precursor to $PM_{2.5}$ (i.e., it was conservatively assumed that 100% of SO_2 emissions becomes $PM_{2.5}$)

Table 11
Merced to Sacramento in SJVAPCD – Estimates of Annual Construction-phase Emissions

Pollutant	Emissions (Tons/Year)										Conformity Applicability Thresholds (tons/year)
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
NO_x	**149.94**	**149.94**	**149.94**	**149.94**	**149.94**	**149.94**	**149.94**	**149.94**	**149.94**	**149.94**	10
VOCs	8.48	8.48	8.48	8.48	8.48	8.48	8.48	8.48	8.48	8.48	10
$PM_{2.5}$*	8.48	8.48	8.48	8.48	8.48	8.48	8.48	8.48	8.48	8.48	100
PM_{10}	17.94	17.94	17.94	17.94	17.94	17.94	17.94	17.94	17.94	17.94	100
CO	62.40	62.40	62.40	62.40	62.40	62.40	62.40	62.40	62.40	62.40	100

Note: **Bold** values exceed applicability thresholds
* Includes sulfur dioxide emission rates as a partial precursor to $PM_{2.5}$ (i.e., it was conservatively assumed that 100% of SO_2 emissions becomes $PM_{2.5}$)

14.0 Reporting and Public Comments

To support a decision concerning the Federal action, the FRA is issuing this draft general conformity determination for public and agency review for a 30-day period as required by 40 C.F.R §§93.155 and 93.156. In developing the analysis underlying this general conformity determination, FRA and the Authority have consulted extensively with the SJVAPCD on a variety of technical and modeling issues. The Authority has also consulted with EPA and CARB on the overall approach to general conformity.

14.1 Draft General Conformity Determination

FRA will provide copies of this draft general conformity determination to the appropriate regional offices of US EPA, CARB and to the SJVAPCD for a 30-day review. The FRA also placed a notice in a daily newspaper of general circulation announcing the availability of the draft general conformity determination and requesting written public comments during a 30-day period. A copy of this draft conformity determination will be made available on FRA's website for public review.

15.0 Findings and Conclusions

As part of the environmental review of the proposed Project, FRA conducted a General Conformity evaluation pursuant to 40 CFR Part 93 Subpart B. The General Conformity regulations apply at this time to this Federal Action because the Project is located in an area that is designated as an extreme nonattainment area for the 8-hour ozone standard, nonattainment for $PM_{2.5}$, and a (partial) maintenance area for PM_{10} and CO. The FRA conducted the General Conformity evaluation following all regulatory criteria and procedures and in coordination with EPA, SJVPCD, and CARB. As a result of this review, the FRA concluded, based on the fact that Project-generated emissions will either be fully offset (for construction phase) or less than zero (for operational phase), that the proposed Project's emissions can be accommodated in the State Implementation (SIP) for the SJVAB. FRA has determined that the proposed Project as designed will conform to the approved SIP, based on:

A commitment from the Authority that construction-phase NO_x and VOC emissions will be offset consistent with the applicable federal regulations through a VERA with the SJVAPCD;

- The Authority and the SJVAPCD will enter into a contractual agreement to mitigate the Project's NO_x and VOC emissions by providing funds for the SJVAPCD's Emission Reduction Incentive Program to fund grants for projects that achieve the necessary emission reductions;
- The SJVAPCD will seek and implement the necessary emission reduction measures, using Authority funds; and
- The SJVAPCD will serve in the role of administrator of the emissions reduction projects and verifier of the successful mitigation effort.

Therefore, FRA herewith concludes that the proposed Project, as designed, conforms to the purpose of the approved SIP and is consistent with all applicable requirements.

16.0 References

40 CFR Part 93 Subpart A. *Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws.*

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